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REPORT

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Uskorennyye Metody Khimicheskogo Analiza Ogneupornykh Materialov, Izdeliy
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ABSTRACT OF "ACCELERATED METHODS FOR THE CHEMICAL ANALYSIS
OF REFRACTORY MATERIALS, REFRACTORY PRODUCTS, AND RAW
MATERIALS USED IN THEIR PRODUCTION" BY N. O. ZEL'DIN

The foreword to this study provides the following information:

Analysis of refractory products of the dinas, semiacidic chamotte, and high aluminum oxide types by classical methods is too slow and cumbersome. The same applies to traditional analytical methods used for quartzites, clays, kaolin, and other raw materials converted by the refractories industry. With classical methods, a complete analysis requires 7 to 8 days and a determination of silicon dioxide alone takes 3 to 4 days. Attempts have been made to simplify and speed up these procedures by eliminating the double evaporation with hydrochloric acid, the double separation of silicon dioxide in the analysis of quartzites and dinas, the check of the purity of silicon dioxide by treatment with hydrofluoric acid, etc. These attempts have inevitably led to inaccurate results.

For that reason, USSR plant laboratories and technical research institutes have occupied themselves for a number of years with improving the methods in question. The results of this work were published in the form of tentative standard methods in 1942 by the Metallurgical Institute of the Academy of Sciences USSR and the Technical Division of the NKChM (People's Commissariat of Ferrous Metallurgy) USSR. The All-Union (formerly Ukrainian) Scientific Research Institute for Refractories was largely responsible for the project leading to the publication of tentative standard methods. The methods for the analysis of refractories were largely covered thereby, but a practical manual which industrial laboratory technicians could use was lacking. The omission has been corrected by the publication of this book.

The bibliography, states the author, will also make the book useful for people whose qualifications are superior to those of laboratory technicians. The author hopes that the new manual will be helpful primarily to plant laboratories which had been destroyed by the Germans, but were reconstructed or in the process of reconstruction.

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CLASSIFICATION

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The main subdivisions of the book are as follows:

1. Classical Methods for Chemical Analysis of Clays, Quartzites, and Dinas and Chamotte Products
2. Accelerated Methods for Chemical Analysis of Quartzite and Dinas Products
3. Accelerated Methods for Chemical Analysis of Chamotte Materials and Fire-Resistant Clays
4. Accelerated Methods for Chemical Analysis of Magnesite (Metallurgical, Caustic, and Crude) and Magnesite Brick
5. Accelerated Methods for Chemical Analysis of Dolomites
6. Accelerated Method for Determination of Free Calcium Oxide in Dolomite Powders, Masses, and Products

The bibliography is classified as follows:

1. Analysis of Dinas and Quartzites (21 references, including 13 Russian)
2. Analysis of Refractory Clays and Chamotte Products (27 references, including 18 Russian)
3. Analysis of Magnesite and Dolomite (11 references, all Russian)
4. Determination of Free Calcium Oxide (9 references, including 3 Russian)

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